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Record Number of SCN-Resistant Soybean Varieties Available, More with Peking Resistance

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Record Number of SCN-Resistant Soybean Varieties Available, More with Peking Resistance

October 28, 2015

The soybean cyst nematode (SCN) reduces soybean yields in every field that it infests. And yield losses can exceed 50 percent when nematode numbers are high and the weather during the growing season is hot and dry. Management of SCN primarily consists of growing nonhost crops, such as corn, in rotation with resistant soybean varieties and using nematode-protectant seed treatments.

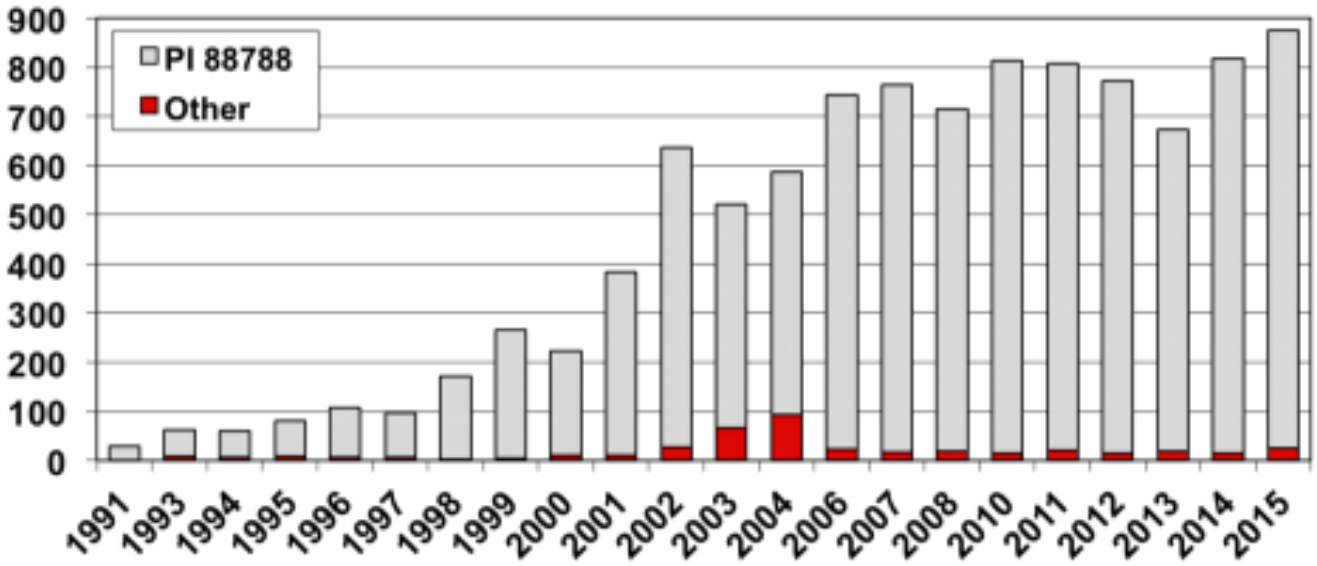
Resistant varieties produce profitable yields, but yields may be declining

Soybean production in Iowa has continued to be profitable despite SCN because of SCN-resistant soybean varieties. Good SCN-resistant varieties produce profitable soybean yields in SCN-infested fields in any type of weather and keep SCN numbers from increasing during the growing season.

However, almost all SCN-resistant soybean varieties available for Iowa farmers contain the same resistance genes, from a soybean breeding line called PI88788. And SCN populations in Iowa fields (and fields throughout the Midwest) have slowly developed increased reproduction on varieties with PI88788 SCN resistance. Increased SCN reproduction will decrease soybean yields.

Record number of SCN-resistant varieties

Every year, Iowa State University (ISU) compiles a list of SCN-resistant soybean varieties available for Iowa soybean farmers. The work is supported by ISU's Integrated Pest Management program and soybean checkoff funds through a grant from the Iowa Soybean Association. This year's list has just been released and is available at no-charge in PDF format **online** at the Iowa State University Extension and Outreach Online Store. The publication contains information on a record-high number of SCN-resistant varieties, 875 (see figure), and 23 varieties have Peking as the source of SCN resistance, not PI88788. This is the most varieties with Peking resistance ever to be included in the list. Still, about 97 percent of the SCN-resistant soybean varieties listed in the publication have resistance from PI88788. There are varieties from 36 companies and two universities included in the updated publication.



Number of SCN-resistant soybean varieties available for Iowa farmers and the sources of resistance - 1991 to 2015.

Not all SCN-resistant soybean varieties provide equal yield or SCN control

Resistance to SCN in soybeans involves at least four genes from PI88788. And when PI88788 is used in breeding an SCN-resistant variety, the variety may or may not receive

all of the resistance genes that are present in the original PI88788. A soybean variety with less than the full number of resistance genes from PI88788 will not provide full SCN control. Consequently, not every variety described as having resistance to SCN will control reproduction of the nematode equally well.

To help Iowa soybean farmers know how well resistant varieties control SCN, Iowa State University evaluates the yield and SCN control of hundreds of SCN-resistant soybean varieties in nine field experiments throughout Iowa each year. This work is supported by soybean checkoff funds through a grant from the Iowa Soybean Association. The results of the annual field evaluations are posted online at www.isuscntrials.info in November and December each year. And a printed report of the results will be mailed to Iowa farmers as an insert in the January 16, 2016, issue of the Iowa Farmer Today.

More information about managing SCN

More information about the biology and management of SCN is available at www.soybeancyst.info and soybeanresearchinfo.com. Iowa State University's management recommendations for SCN are available online in a downloadable format, Soybean Cyst Nematode (SCN) Management Recommendations, IPM 63.

Summary

- SCN continues to be a major cause of soybean yield loss in Iowa.
- Resistant varieties can produce profitable soybean yields in SCN-infested fields.
- Iowa SCN populations are developing increased reproduction on varieties with SCN resistance from PI88788, reducing yields.
- An updated list of SCN-resistant soybean varieties for Iowa has just been released, with 875 varieties – a record high number.
- For 2015, there are 23 varieties with the Peking source of SCN resistance.

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Crop:
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